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[\[Abstract\]](#) [\[PDF Full-Text \(273 KB\)\]](#) **IEEE CNF****2 Fabrication of 50-100 nm patterned InGaN blue light emitting heterostructures***Lu, C.; Yin, A.; Im, J.-S.; Nurmikko, A.V.; Xu, J.M.; Han, J.;*Lasers and Electro-Optics Society, 2001. LEOS 2001. The 14th  
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*Kahng, A.B.; Pati, Y.C.;*

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*Terasawa, T.;*

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- 4 Design for manufacturability and global routing: A cost-driven lithographic correction methodology based on off-the-shelf sizing tools 82%  
 P. Gupta , A. B. Kahng , D. Sylvester , J. Yang  
**Proceedings of the 40th conference on Design automation** June 2003  
 As minimum feature sizes continue to shrink, patterned features have become significantly smaller than the wavelength of light used in optical lithography. As a result, the requirement for dimensional variation control, especially in critical dimension (CD) 3?, has become more stringent. To meet these requirements, resolution enhancement techniques (RET) such as optical proximity correction (OPC) and phase shift mask (PSM) technology are applied. These approaches result in a substantial inc ...
- 5 Reticle enhancement technology trends: resource and manufacturability implications for the implementation of physical designs 80%  
 Warren Grobman , Robert Boone , Cece Philbin , Bob Jarvis  
**Proceedings of the 2001 international symposium on Physical design** April 2001  
 In this paper, we briefly describe the lithography developments known as RET (Resolution Enhancement Technologies), which include off-axis illumination in litho tools, Optical and Process Correction (OPC), and phase shifting masks (PSM). All of these techniques are adopted to allow ever smaller features to be reliably manufactured, and are being generally adopted in all manufacturing below 0.25 microns. However, their adoption also places certain restrictions on layouts. We explore these res ...
- 6 Subwavelength lithography (panel): how will it affect your design flow? 80%  
 Andrew B. Kahng , Y. C. Pati , Warren Grobman , Robert Pack , Lance Glasser  
**Proceedings of the 36th ACM/IEEE conference on Design automation conference** June 1999
- 7 Session 7: Lithography and Routing: What's Next? (invited): Research directions for coevolution of rules and routers 77%  
 Andrew B. Kahng  
**Proceedings of the 2003 international symposium on Physical design** April 2003  
 Design rules in advanced IC manufacturing processes are increasingly problematic for modern router architectures and algorithms. This paper first reviews types and causes of "difficult" design rules, as well as implications for current routing approaches. Next, some basic router components are assessed with respect to future viability. Last, the paper discusses prospects for future "coevolution" of design rules and detailed routing methods.
- 8 Reticle enhancement technology: implications and challenges for physical design 77%  
 W. Grobman , M. Thompson , R. Wang , C. Yuan , R. Tian , E. Demircan  
**Proceedings of the 38th conference on Design automation** June 2001  
 In this paper, we review phase shift lithography, rule vs. model based methods for OPC and model-based tiling, and discuss their implications for layout and verification. We will discuss novel approaches, using polarizing films on reticles, which change the game for phase-shift coloring, and could lead to a new direction in c:PSM constraints on physical design. We emphasize the need to do tiling that is model-driven and uses optimization techniques to achieve planarity for better manufactu ...
- 9 Practical application of full-feature alternating phase-shifting technology for a phase-aware 77%

standard-cell design flow


Michael Sanie , Michel Côté , Philippe Hurat , Vinod Malhotra

**Proceedings of the 38th conference on Design automation** June 2001

As the semiconductor industry enters the subwavelength era where silicon features are much smaller than the wavelength of the light used to create them, a number of "subwavelength" technologies such as Optical Proximity Correction (OPC) and Phase-Shifting Masks (PSM) have been introduced to produce integrated circuits (ICs) with acceptable yields. An effective approach to subwavelength IC production includes a combination of these techniques, including OPC and PSM. Nevertheless, ...

**10 Design technology productivity in the DSM era (invited talk)**

77%


 Andrew B. Kahng

**Proceedings of the conference on Asia South Pacific Design Automation Conference** January 2001

Future requirements for design technology are always uncertain due to changes in process technology, system implementation platforms, and applications markets. To correctly identify the design technology need, and to deliver this technology at the right time, the design technology community - commercial vendors, captive CAD organizations, and academic researchers - must focus on improving design technology time-to-market and quality-of-result. Put another way, we must address the well-known ...

**11 Impact of RET on physical layouts**

77%

 Franklin M. Schellenberg , Luigi Capodieci

**Proceedings of the 2001 international symposium on Physical design** April 2001

In this paper, we briefly describe the lithography developments known as RET (Resolution Enhancement Technologies), which include off-axis illumination in litho tools, Optical and Process Correction (OPC), and phase shifting masks (PSM). All of these techniques are adopted to allow ever smaller features to be reliably manufactured, and are being generally adopted in all manufacturing below 0.25 microns. However, their adoption also places certain restrictions on layouts. We explore these re ...

**12 Application of automated design migration to alternating phase shift mask design**

77%


 Fook-Luen Heng , Lars Liebmann , Jennifer Lund

**Proceedings of the 2001 international symposium on Physical design** April 2001

The use of phase shifted mask (PSM) has been demonstrated to be a powerful resolution enhancement technique (RET) for the printing of features at dimensions below the exposure wavelength in deep submicron technologies. Its implementation in physical design has introduced non-conventional design ground rules, which impact the traditional layout migration process and designers productivity. In this panel discussion paper, we propose a solution to extend the traditional constraint-based layout ...

**13 Embedded tutorial: subwavelength lithography**


77%

 Tsuneo Terasawa

**Proceedings of the 2000 conference on Asia and South Pacific design automation** January 2000

**14 Subwavelength optical lithography: challenges and impact on physical design**

77%

 A. B. Kahng , Y. C. Pati


## Proceedings of the 1999 international symposium on Physical design April 1999

**15** Subwavelength lithography and its potential impact on design and EDA 77%

 Andrew B. Kahng , Y. C. Pati

**Proceedings of the 36th ACM/IEEE conference on Design automation conference June 1999**

**16** 0.18 $\mu$ m CMOS and beyond 77%

 D. J. Eaglesham

**Proceedings of the 36th ACM/IEEE conference on Design automation conference June 1999**

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